

International Application No. PCT/SE03/00651  
Title: A DEVICE AND A METHOD FOR SAMPLING OF MILK  
Preliminary Amendment

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) A device for sampling of milk from an animal, the milk of which is to be tested, wherein the device comprises:
  - a collecting member (~~15, 15'~~) arranged to receive milk samples from a milk line (~~1~~), which is arranged to transport milk from one animal (~~3~~) at a time; and
  - a passage (~~8a, 12'', 13~~) arranged to allow a milk flow from the milk line (~~1~~) to the collecting member (~~15, 15'~~);

~~characterised in that~~ wherein the device further comprises flow means (~~11, 19~~) arranged to provide a milk flow, from ~~said~~ animal (~~3~~), through at least a part of the passage (~~8a, 12'', 13~~) at least a time period before a milk sample is taken in order to rinse at least ~~said~~ part of the passage (~~8a, 12'', 13~~) from milk residues from a previously milked animal.
2. (currently amended) A device according to claim 1, ~~characterised in that~~ wherein the milk line ~~1~~ comprises a collecting container (~~4, 4'~~), wherein the passage (~~8a, 12'', 13~~) is arranged to allow a milk flow from the collecting container (~~4, 4'~~) to the collecting member (~~15, 15'~~).
3. (currently amended) A device according to claim 1 ~~or 2~~, ~~characterised in that~~, wherein the device further comprises a conduit loop (~~8~~), having a first end (~~9~~) connected to the milk line

- (1) and a second end (10) connected to the milk line (1) at a distance from the first end (8), wherein at least a first part of the conduit loop (8a) is comprised in said passage.
4. (currently amended) A device according to claim 3, ~~characterised in that~~ wherein the first part of conduit loop (8a) has an extension from the first end (9) to a valve member (12), which is arranged to allow a discharge of the milk in the conduit loop (8) to the collecting member (15).
  5. (currently amended) A device according to claim 4, ~~characterised in that~~ wherein the valve member comprises a three-way valve (12).
  6. (currently amended) A device according to claim 4 or 5, ~~characterised in that~~, wherein the device further comprises a second conduit (13) having an extension from the valve member (12) to the collecting member (15), which second conduit (13) constitutes a second part of the passage.
  7. (currently amended) A device according to claim 3, ~~characterised in that~~ wherein the first part of conduit loop (8a) has an extension from the first end (9) of the conduit loop to a collecting member (15); which is arranged in the conduit loop (8).
  8. (currently amended) A device according to claim 7, ~~characterised in that~~ wherein the conduit loop (8) comprises a valve (27), which in a closed position is arranged to accomplish accumulate stagnant milk in the collecting member (15).

9. (currently amended) A device according to claim 1 ~~or 2, characterised in that, wherein~~ the device further comprises a valve (12<sup>n</sup>) arranged in the milk line (1), wherein ~~said~~ passage comprises at least an opening (12<sup>m</sup>) of the valve (12<sup>n</sup>).
10. (currently amended) A device according to ~~any one of the claims 3 to 9, characterised in that~~ claim 3, wherein ~~said~~ flow means (11, 19) is arranged to provide ~~said~~ milk flow in at least ~~said~~ part of the passage as soon as milk from ~~said~~ animal (3) flows in the milk line (1) at the first end (9) of the conduit loop (8).
11. (currently amended) A device according to ~~any one of the preceding claims, characterised in that~~ claim 1, wherein the flow means comprises a pump (11, 19).
12. (currently amended) A device according to ~~any one of the preceding claims, characterised in that~~ claim 1, wherein the milk flow provided by the flow means comprises the gravitation is gravity aided.
13. (currently amended) A device according to ~~any one of the preceding claims, characterised in that~~ claim 1, wherein the device further comprises an analysing device (14), which is arranged to analyse the milk in the collecting member (15, 15<sup>n</sup>).
14. (currently amended) A device according to claim 13, ~~characterised in that~~ wherein the analysing device (14) is arranged to provide a count from the group consisting of somatic cells ~~and/or fat droplets, and combinations thereof,~~ in the milk sample.
15. (currently amended) A device according to claim 14, ~~characterised in that~~ wherein the analysing device (14) is arranged to add chemical substances to the collecting member (15)

- in order to provide the count of the group consisting of somatic cells, or fat droplets and combinations thereof in the milk sample.
16. (currently amended) A device according to claim 14, ~~characterised in that~~ wherein the analysing device (14) is arranged to use a camera system (25) to record images of the milk sample in the collecting member (15) in order to provide the count from the group consisting of somatic cells, ~~and/or~~ fat droplets, and combinations thereof.
17. (currently amended) A device according to ~~any one of the preceding claims~~, characterised ~~in that~~ claim 1, wherein the device further comprises a control unit (17) arranged to control the milk sampling process.
18. (currently amended) A device according to claim 17, ~~characterised in that~~ wherein the control unit (17) is arranged to initiate sampling of the milk only after that a certain amount of milk from ~~said~~ animal (3) has passed through at least ~~said~~ part of the passage (8a, 12", 13).
19. (currently amended) A device according to ~~any one of the claims 17 or 18~~, characterised in ~~that~~ claim 17, wherein the control unit (17) is arranged to control the activation of ~~said~~ flowing means (11, 19).
20. (currently amended) A device according to ~~any one of the claims 17 to 19~~, characterised in ~~that~~ claim 17, wherein the control unit (17) is connected to a reading device (7) and arranged to receive information from the reading device (7) about the identity of the animal (3).
21. (currently amended) A device according to ~~any one of the preceding claims 17 to 20~~, ~~characterised in that~~ claim 17, wherein the control unit (17) is connected to a flow meter (16)

- and arranged to receive information from the flow meter (16) about the presence of a milk flow in the milk line (1).
22. (currently amended) A device according to ~~any one of the preceding claims 17 to 21,~~ characterised in that claim 17, wherein the control unit (17) is connected to ~~the an~~ analysing device (14) and arranged to receive information from the analysing device (14) about the results of the milk samples.
23. (currently amended) A device according to ~~any one of the preceding claims 3 to 22,~~ characterised in that claim 3, wherein the conduit loop (8) has a smaller inner cross-section area than the milk line (1).
24. (currently amended) A device according to claim 1, wherein ~~any one of the preceding claims,~~ characterised in that the device is connected to a milk line (1), which is arranged to transport milk from one teat of an animal (3) at a time.
25. (currently amended) A device according to claim 1, wherein ~~any one of the preceding claims,~~ characterised in that the device is connected to a milk line (1), which constitutes a part of an automatically controlled arrangement for milking of animals.
26. (currently amended) A device according to claim 25, ~~characterised in that~~ wherein the arrangement comprises a milking robot (21).
27. (currently amended) A milking robot comprising a device according to ~~any one of the preceding claims,~~ characterised in that claim 1, wherein the device constitutes an integrated part of ~~the a~~ milking robot.

28. (currently amended) A method for sampling of milk from an animal, the milk of which is to be tested, comprising the steps of:

providing wherein a device ~~is used~~ comprising a collecting member (15, 15') arranged to receive milk samples from a milk line (1), which is arranged to transport milk from one animal (3) at a time, and a passage (8a, 12'', 13) arranged to allow a milk flow from the milk line (1) to the collecting member (15, 15'), ~~characterised by,~~  
method comprising the step of:

providing a milk flow from ~~said~~ animal through at least a part of the passage (8a, 12'', 13) at least a time period before a milk sample is taken in order to rinse at least ~~said~~ part of the passage (8a, 12'', 13) from milk residues from a previously milked animal.

29. (currently amended) A method for collecting milk from an animal comprising the step of milking an animal using an arrangement for the milking of animals which includes Use of  
a device according to ~~any one of the claims 1-26 in an arrangement for milking of animals.~~  
claim 1.

30. (currently amended) A milking robot, wherein the milking robot (21) comprises a device (6) for sampling of milk from an animal the milk of which is to be tested, a collecting member (15, 15') arranged to receive milk samples from a milk line (1), which is arranged to transport milk from one animal (3) at a time, a passage (8a, 12'', 13) arranged to allow a milk flow from the milk line (1) to the collecting member (15, 15'), and an analysing device (14) arranged to provide a count of the group consisting of somatic cells, ~~and/or~~ fat droplets, and

International Application No. PCT/SE03/00651

Title: A DEVICE AND A METHOD FOR SAMPLING OF MILK

Preliminary Amendment

combinations thereof in the milk sample, ~~characterised in that wherein~~ the milking robot (21) comprises flow means (~~11, 19~~) arranged to provide a milk flow, from ~~said~~ animal (3), through at least a part of the passage (~~8a, 12<sup>u</sup>, 13~~) at least a time period before a milk sample is taken in order to rinse at least ~~said~~ part of the passage (~~8a, 12<sup>u</sup>, 13~~) from milk residues from a previously milked animal.